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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,536	08/31/2001	Lee C. Moore	D/A0A45	3291
7590	02/09/2006		EXAMINER	
Patrick R. Roche, Esq. Fay, Sharpe, Fagan, Minnich & McKee, LLP 1100 Superior Avenue, 7th Floor Cleveland, OH 44114-2518			KOYAMA, KUMIKO C	
			ART UNIT	PAPER NUMBER
			2876	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/944,536	MOORE, LEE C.
	Examiner	Art Unit
	Kumiko C. Koyama	2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 November 2005.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 2,4-8,10-13,15-18 and 20-28 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 2,4-8,10-13,15-18 and 20-28 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 31 August 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Amendment received on November 18, 2005 has been acknowledged.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 4, 5, 7, 8, 10-13, 18, 20 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al (US 4,813,010) in view of Palmer et al (US 6,002,798).

Re claims 2, 10, 18, 20, 23 and 28: Okamoto discloses that a general document is divided into a plurality of blocks, and headings are assigned to the respective blocks. Each block is further divided into subblocks and subheadings are assigned to the respective subblocks (col 1, lines 12-20). Okamoto teaches a document processing using heading rules storage for generating documents with hierarchical logical architectures that when a document data is input at input device, the input document data is sequentially stored in a document storage. The input document data is segmented into a plurality of blocks by document processor. In segmentation processing, a line return code and a space code or segmentation symbol such as "...", ":", ",", or ":" are determined as segmentation codes. In this case, the segmentation sentence length is measured by counting characters. (col 5, lines 14-29). Such disclosure teaches the delimiter definition limitation of the claim. Okamoto further discloses that if the measure value falls within

a predetermined value the sentence is determined as having the possibility of being a heading sentence, which is interpreted as searching the document to find the occurrences of items corresponding to the defined sub-section delimiter. When the segmented sentence is determined as having the possibility of being a heading sentence according to the measure number of characters, or delimiter, the processor further determines whether the segmented sentence is a heading candidate, and then a heading word (col 5, lines 30-40, col 6, lines 27-45). After the segmented sentence is determined as a heading word, the heading goes through a decision to be assigned with a logical hierarchy, such as C1 in this case (col 6, lines 47-60). The logical architecture containing the chapter heading is stored in logical architecture storage (col 6, lines 55-60). Okamoto also discloses that it is known in the art that document data is processed in units of pages of the printing sheets (col 1, lines 24-25).

Okamoto does not specifically disclose generating an index for the document. Okamoto fails to teach scanning a printed version of the document to generate scan data, performing one of optical character recognition functions and document recognition functions on the scan data to generate an electronic version of the document. Okamoto also fails to teach selecting an exemplary sub-section title, performing one of document recognition and optical character recognition on the selected exemplary sub-section title, and using at least one recognized property of the exemplary sub-section title as a subsection delimiter definition.

Palmer teaches a method and apparatus for creating and indexing documents. An original document is inputted by a scanner that operates to scan the original documents printed on a sheet of paper, and to convert the information of those original documents into a bit-by-bit computer readable representation of that document (col 4, lines 60+) and stores it into RAM (col 6, lines

1-2). The structure of the document is determined by conventional block selection techniques which utilize a rule-based knowledge system for identifying specific areas in a document and for determining the content of the image within those areas such that the document image is decomposed into a general set of objects (col 2, lines 45-51 and col 5, lines 55+). The CPU identifies the type of region, for example, whether a region is a title region, a text region, a paragraph region, a table region, etc (col 6, lines 2-6). Palmer also discloses that the CPU 11 subjects designated document regions to OCR processing in preparation for creating a retrieval index for the document. Furthermore, Palmer discloses that the CPU 11 offers the operator the option of selecting the index level, wherein the operator selects a level, such as level 1, and then the CPU 11 subjects only title regions to OCR processing. The resulting text from the title regions is provided for a retrieval index to allow the document to be retrieved when words in the title match a specified search query (col 6, lines 55+). Palmer also teaches displaying the document (col 2, lines 28-31).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Palmer to the teachings of Okamoto in order to in order to quickly locate the index occurrence position of a major sub-section of the document and customized indexing particular for a particular user or field for faster and specialized use.

Re claims 11, 26 and 27: As described above in Okamoto, in segmentation processing, a line return code and a space code or segmentation symbol such as "...", ";", ",", or ":" are determined as segmentation codes. Such segmentation codes are text location description and a specific point coordinate within the document.

Re claims 4, 5, 24 and 25: The scanning and OCR process described above generates an electronic version of the document.

Re claims 7 and 12: As described above in Palmer, the CPU identifies the type of region, for example, whether a region is a title region, a text region, a paragraph region, a table region, etc (col 6, lines 2-6). Palmer also discloses that the CPU 11 subjects designated document regions to OCR processing in preparation for creating a retrieval index for the document. As a result of the combination of Palmer and Okamoto, a certain region within document can be selected and apply the OCR process, and further process it with Okamoto's indexing method. By identifying a certain region is a title region, the CPU is selecting an exemplary sub-section title, and performing an OCR.

Re claims 8 and 13: Palmer teaches that an input is made by the user to input a selection regarding the index. Okamoto teaches that a demarcation point is defined as a sub-section delimiter.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto in view of Palmer as applied to claim 1 above, and further in view of Kuga et al (US 5,276,616). The teachings of Okamoto as modified by Palmer have been discussed above.

Okamoto as modified by Palmer fail to teach displaying the created index, checking the displayed index is correct and correcting the index.

Kuga further discloses an index generating unit 6 including an index entry list generator 22 connected to text storage 20 for extracting index entries from the textual data, an index entry storage 24 connected to index entry list generator 22 for storing the index entries outputted from the generator 22, and an index editor 26 for editing the index entries stored in index entry storage

24 based on the instructions from the input unit 2, which includes a keyboard (col 7, line 24) and for applying the edited index entries to printer 10. Such disclosure teaches checking and correcting the index. Index editor 26 is for alphabetically rearranging the index entries and classifying the same into different initial letters to enable printing of the index (col 7, lines 40-52). Kuga also discloses a text input unit, which is a flexible disk driver for applying text data stored in an external medium to text editor 18, and the output of the text editor is connected to display (col 7, lines 34-36). Such disclosure teaches that the text is in an electronic form. Kuga further discloses that the input unit 2 is to enable input by an operator by generating signals such as character data or operation codes in response to a manual operation, a text editing unit 4 connected to the input unit 2, a display unit 8 for displaying the edited text or the like, an index generating unit 6 connected to input unit 2 and text editing unit 4 for automatically generating an index from the text edited by text editing unit 4 and index generating unit for printing the edited text or the index on paper 28 (col 7, lines 10-23). Kuga teaches a keyword database for storing extracted set of keywords that are updated and added by the operator through the keyboard (col 3, lines 35-45).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Kuga to the teachings of Okamoto as modified by Palmer in order to ensure the accuracy of the index such that erroneous results are not produced as a result from misinterpreted or misread document indexes.

4. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto in view of Palmer as applied to claim 9 above, and further in view of Schmidt et al (US 4,903,229). The teachings of Okamoto as modified by Palmer have been discussed above.

Okamoto as modified by Palmer fail to teach that the print engine comprises a xerographic printer.

Schmidt teaches a forms generating and information retrieval system utilizing a xerographic print engine 24 (col 2 line 34).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the teachings of Schmidt to the teachings of Okamoto as modified by Palmer because the xerographic print engine generates forms and inures the benefits of graphic reproduction.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto in view of Palmer and Schmidt as applied to claim 15 above, and further in view of Herregods et al (US 6,064,397). The teachings of Okamoto as modified by Palmer and Schmidt have been discussed above.

Okamoto as modified by Palmer and Schmidt fail to teach that the print engine comprises an inkjet printer.

Herregods teaches that a printer can be a inkjet printer (col 1 line 42).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the teachings of Herregods to the teachings of Okamoto as modified by Palmer and Schmidt because an inkjet printer can provide a reproduction of colored document, therefore it can provide a more precise reproduction of the document when the document includes colored features.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto in view of Palmer as applied to claim 1, and further in view of Alam et al (US 6,336,124). The teachings of Okamoto as modified by Palmer have been discussed above.

Okamoto as modified by Palmer fails to teach that the automatically generated index is an automatic generated table of contents of the document, and the items corresponding to the defined sub-section delimiter are chapter titles displayed in an order in which they appear in the document.

Alam teaches that heading of input document may be located to generate a linked table of contents page containing the headings, each table of contents heading containing a link to the heading contained in the output document (col 2, lines 37-45). Alam also discloses that the table contents is displayed in the display page (col 19, lines 17-25).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Alam to the teachings of Okamoto as modified by Palmer in order to easily show the hierarchy of the documents as well as facilitating the selection and view of a particular page of the document, which provides faster access to the particular part of interest in the document.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al (US 6,002,798) in view of Jensen et al (US 6,834,276).

Palmer teaches a method and apparatus for creating and indexing documents. A retrieval index by which images of documents may be retrieved is created. A document is scanned to form a document image, and the document image is processed by block selection techniques to identify areas on the document of a first type such as title areas, and areas on the document of

other types (col 3, lines 4-20). The first type (such as title areas) is a subsection delimiter that is used to determine certain types of sections in the document. Identifying such first type areas is considered as searching the document to find the occurrences of the items corresponding to the defined subsection delimiter. The document image in the first type areas is converted, and the converted text is indexed so as to form a retrieval index (col 3, lines 4-20). Such teachings teaches generating an index for the document with found items corresponding to the sub-section delimiter.

Palmer fails to teach that the sub-section delimiter comprises a user indicating at least one of font size or font style.

Jensen teaches that a user selects the highlighting functions, such as font options, colors and styles, for text to be highlighted from background text for text of interest, such as search terms (col 30, lines 15-20).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Jensen to the teachings of Palmer because difference in text font and text sizes are often used to indicate the users a certain importance of the text, and therefore, acquiring from the user the important data makes the retrieval index useful and convenient.

Response to Arguments

8. Applicant's arguments filed November 18, 2005 have been fully considered but they are not persuasive.

Applicant submits that Okamoto and Palmer does not disclosed a user indicating at least one of a font size, a font style, a text string, a text location description, a predetermined machine readable symbol in a specific point coordinate with the document. However, the Examiner respectfully disagrees. First the Examiner would like to point out that for claim 2, the claim recites that “*where determining a sub-section delimiter comprises a user indicating at least one of a font size, a font style, a text string, a text location description, a predetermined machine readable symbol, and a specific point coordinate within the document or wherein determining a sub-section delimiter comprises using a predetermined machine readable symbol representing a demarcation point on a printed version of the document as the sub-section delimiter*” (emphasis added). In order to meet the recited claim, the prior art only needs to read on one of either:

“*where determining a sub-section delimiter comprises a user indicating at least one of a font size, a font style, a text string, a text location description, a predetermined machine readable symbol, and a specific point coordinate within the document*”

OR

“*wherein determining a sub-section delimiter comprises using a predetermined machine readable symbol representing a demarcation point on a printed version of the document as the sub-section delimiter.*”

Futhermore, when first choice is selected, the prior art only need to read on one of the following:

- a font size
- a font style
- a text string
- a text location description

- a predetermined machine readable symbol
- a specific point coordinate within the document.

Provided the explanation above, the Examiner will not explain how the prior art reads on the claimed limitations for at least the following reasons.

Okamoto specifically teaches that in the segmentation process, a line return code and a space code or segmentation symbol such as “...”, “;”, “,” or “.” are determined as a segmentation codes. According to Merriam-Webster’s Collegiate Dictionary (tenth edition), a comma is defined as “a mark of separation within a sentence” and a semicolon is defined as a mark “used chiefly in a coordinating function between major sentence elements.” Such elements, for example, are at least a text location description and a predetermined machine readable symbol in a specific point coordinate with the document. A comma is a text location description because it is a separation between a major sentence elements, which means wherever there is a comma there is one sentence on both side of the comma and thereby indicating that there is at least a sentence having some text. A semicolon is also a text location description because wherever there is a semicolon there is one sentence on both side of the semicolon and thereby indicating that there is at least a sentence having some text. Since the combination of Okamoto and Palmer describes an OCR, all of the text and punctuation marks are considered machine readable symbols. And both comma and semicolon describes a specific point coordinate within the document that describes a separation between two sentences, comma and semicolon are considered as a predetermined machine readable symbol in a specific point coordinate within a document. The above explanation also applies to claim 20, wherein the claim recites that the subsection delimiter comprises marking a paper version of the document with at least a

predetermined machine readable demarcation symbol prior to scanning the document because comma and semicolon are printed on the paper version. The comma and semicolon are a recognized property of the exemplary subsection delimiter as recited in claim 7 because comma and semicolon are recognized properties by the OCR.

Palmer also teaches that an operator has the option of selecting the index level, which suggests that an operator can input a selection. The important fact is that Palmer suggests that the operator can provide an input selection. Since Palmer suggests that the operator provide an input to make a selection, Okamoto as modified by Palmer can designate which segmentation codes are to be searched in the document. Therefore, Okamoto as modified by Palmer teaches that a user is capable of indicating a subsection delimiter. And such teachings also teaches a delimiter designator module operative to communicate with document processor operator through a user interface as claimed in claim 10, and entering a subsection delimiter as claimed in claim 12, 18 and 28.

The Applicant further submits that Okamoto as modified by Palmer does not disclose or suggest finding occurrences of items corresponding to a defined subsection delimiter and generating an index for document with found items corresponding to the subsection delimiter occurrences. However, the Examiner respectfully disagrees. Okamoto uses the segmentation codes to further determine whether a sentence is a chapter heading, which teaches finding occurrences of items corresponding to a defined subsection delimiter. The Examiner understands that Okamoto does not specifically teach generating an index for a document. However, the Examiner presents Palmer, who does teach generating indexes for a document. Palmer also teaches determining or finding text that is to be indexed. Because both Okamoto and Palmer both

teach searching for certain text and item occurrences for easier retrieval of certain section or portion of a document, there is motivation to combine the two prior art. And therefore, Okamoto and Palmer teach the claimed invention.

The Applicant also submits that Palmer does not disclose or suggest displaying an index. However, the Examiner respectfully disagrees because Palmer teaches that the document is displayed and specifically, Palmer teaches that how the document is rendered on the display may be defined by the operator (col 2, lines 24-26). Furthermore, the structural view of a document image includes labeled objects, such as “title”, “text”, ‘table”, “line art”, “half-tone” and similar objects that are ordinarily found in documents, and those object are displayed for presentation to the operator in an abstract layout that is representative of the full document image (col 2, lines 17-25). Therefore, Palmer at least suggests displaying an index. The above explanation also applies to claim 12.

Claim 22 has been amended, and therefore, required search and consideration. Subsequently, the claim now has a new ground of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

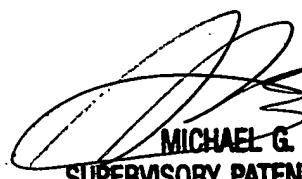
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kumiko C. Koyama whose telephone number is 571-272-2394. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kumiko C. Koyama
Kumiko C. Koyama
February 06, 2006



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